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The following CALCULATIONS and PROJECTIONS of the Transit of Venus were laid before the Society agreeable to their Dates, and claim a Place here, as it may be of use, in various Respects, to compare them with the actual Observations of the Transit, afterwards made in this Province; and from thence to collect the Differences between Computation and Observation, together with the Causes of those Differences.

PROJECTION of the ensuing TRANSIT of VENUS over the SUN, which is to happen June 3d, 1769. By David Rittenhouse, A. M.

ELEMENTS from Halley's Tables, for Lat. 40° N. & Long. 75° W. from Greenwich.

Communicated by Revd. Dr. Smith, June 21, 1769.

1769, June 3d, at 3 h. P. M. Sun's place, $2^{\circ} 13^{\circ} 21' 37''$
Heliocentric place of ♀ in ecliptic, $8. 13. 18. 11$ Lat. ♀ N. $4^{\circ} 29'$

$$\ominus \text{ à } ♀ \quad 3^{\circ} 26''$$

At 8 Hours P. M. Sun's Place, $2^{\circ} 13^{\circ} 33' 35''$
Place of Venus $8. 13. 38. 2$ Lat. ♀ N. $3^{\circ} 18''$

$$♀ \text{ à } \ominus \quad 4. 27$$

Log. $\ominus \text{ à } \odot$ 5.006568 Distance 10152385

Log. ♀ à \odot 4.861095 Dist. 7261652

Log. ♀ à \ominus 4.460858 Dist. 2889733

Diff. Log. .400237

Apparent Semidiameter of \odot $15'. 51'' = 15', 85$

Apparent Semidiameter of ♀ - - - $0', 5719$

Diminish'd * Semidiam. of \odot $6'. 3065$ } in Ratio of 7262 to 2889

Diminish'd Semidiam. of ♀ $0, 2276$ }

Beginning of the Transit, 2h. 16'

End 8. 50

But supposing the Sun's Horizontal Parallax but 8 Seconds, then for the above Lat. and Lon.

First External Contact will be at 2h. 11min.

* The Diameters were diminished to answer the Scale to which the Latitude of Venus was set off in the Projection.

See the Projection; Plate, I.

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